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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,468	09/11/2003	Masahiko Shakuto	242299US2	6827
22850	7590	06/09/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			LEE, SUSAN SHUK YIN	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/659,468

Applicant(s)

SHAKUTO ET AL.

Examiner

Susan S. Lee

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-115 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-115 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/28/05, 3/29/05, 1/30/04 (2 Sheets).
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: See Continuation Sheet (next page).

Continuation of Attachment(s) 6). Other: consideration of papers filed 1/30/04, 2/28/05, 12/10/04 (2 sheets)..

DETAILED ACTION

Applicant has identify in papers filed on 3/9/05 of claims 1-17, 53, 56, 59, 62-72, 73-87, 88, and 89 to be examined in response to the objection and rejection made to claims 1-115 under the grounds of multiplicity because they are unduly multiplied.

Claims 18-52, 54, 55, 57, 58, 60, 61, and 90-115 have not been acted on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly jointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-115 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 1-115 are rejected under the grounds of multiplicity because they are unduly multiplied. The submission of 115 claims to describe a cleaning device or cleaning unit having a blade and a vibrating member beclouds definition in a maze of confusion. MPEP 2173.05(n).

Claim Objections

Claims 73-89 are objected to because of the following informalities:

As to claim 73, line 3, "a image" is grammatically incorrect.

As to claim 88, line 6, "a image" is grammatically incorrect

As to claim 89, line 11, "a image" is grammatically incorrect.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 8, 53, and 56 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshikawa (Japan, 11-174922) or US equivalent reference to US Patent No. 6,128,461.

Yoshikawa discloses an image forming device with an image carrier 1 and a cleaning device 2 equipped with the cleaning blade 3, a piezoelectric element that is a vibration imparting device 15 for imparting the vibration on a cleaning blade 3 so that the blade 3 is prevented from turning up. This reads on the instant invention's "blade member does not curl". Note abstract of Japan, 11-174922. The US Patent No. 6,128,461 discloses that the vibration imparting device 15 is provided on an attachment metal plate of cleaning blade 3. This attachment metal plate reads on the instant invention's vibratable member. Note US Patent 6,128,461, column 6, lines 19-24. As shown in Fig. 2 of Japan, 11-174922, the blade 3 is positioned that the length of the blade is parallel to an axis of rotation of the image carrier 1 and makes an acute angle with a tangent to the surface of the image carrier 1 in a direction of rotation A of the image carrier 1. The acute angle is less than 90 degrees as shown in Fig. 2. In the US equivalent reference to US Patent No. 6,128,461, Yoshikawa discloses a pressure adjusting hydraulic pump 18 to adjust the pressure the cleaning blade 3 applies upon

the surface of the image carrier 1. Note column 8, line 58-column 9, line 2. This reads on the instant invention's "force imparting unit" since the pump 18 allows the pressing force to be effective to good cleaning action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa (Japan, 922) – US equivalent, 6,128,461 in view of Muramatsu (Japan, 7-337042).

Yoshikawa differs from the instant invention by not disclosing the piezoelectric element is a laminated type piezoelectric element that displaces the vibratable member in a face direction as d-31 direction.

Muramatsu discloses piezoelectric elements 121, 122 are with piezoelectric effect in the direction of d – 31 for excitation. Note abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Yoshikawa with that of Muramatsu so

that protection of the laminate can be obtained due to tensile stress at the time of oscillation.

Claim 59 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa (Japan, 922) – US equivalent, 6,128,461 in view of Matsuguma (2003/0063928).

Yoshikawa differs from the instant invention by not disclosing a plurality of process cartridges.

Matsuguma discloses a color image forming apparatus with a plurality of process cartridges 7y, 7m, 7c, and 7k. Each process cartridge has a photosensitive drum 1, primary charger 3, developing means 5 and a cleaning means 6. The cleaning means 6 is in the form of a blade (note Fig. 1). Each process cartridge has a corresponding transfer roller 8 for transferring toner images from the surfaces of the photosensitive drums 1 onto a transfer material S. Note column 3, paragraphs [0044], [0045], and [0046].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Yoshikawa with that of Matsuguma so that a color copy can be obtained.

Claims 62, 63, 67-69, 72-74, 78, 82, 86, and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa (Japan, 922) – US equivalent, 6,128,461 in view of Nakamura et al. (Japan, 2002-268490).

Yoshikawa (6,128,461) also discloses that the vibrating device has a vibration waveform to the cleaning blade. The waveform has a frequency and an amplitude and

can be changed in accordance to a condition of the image carrier. Some conditions may be a detected image density or residual toner amount on the image carrier. Note column 11, lines 29-59.

Yoshikawa differs from the instant invention by not disclosing a toner having sphericity of 0.96 to 1.00 and the toner is produced by polymerization method.

Nakamura et al. discloses toner of a spherical particles used in an image forming device being made by a polymerizing method and having shape factor of 0.940 to 0.985. Note abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Yoshikawa with that of Nakamura et al. so that picture of high quality can be obtained because of the use of a toner having small particle size as disclosed by Nakamura et al.

Claims 53 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuguma (2003/0063928) in view of Yoshikawa (Japan, 922) – US equivalent, 6,128,461.

Matsuguma discloses a color image forming apparatus with a plurality of process cartridges 7y, 7m, 7c, and 7k. Each process cartridge has a photosensitive drum 1, primary charger 3, developing means 5 and a cleaning means 6. The cleaning means 6 is in the form of a blade (note Fig. 1). Each process cartridge has a corresponding transfer roller 8 for transferring toner images from the surfaces of the photosensitive drums 1 onto a transfer material S. Note column 3, paragraphs [0044], [0045], and [0046].

Matsuguma differs from the instant invention by not disclosing a vibrating member and a vibrating unit that vibrates the vibratable member so that the end of the blade member vibrates to clean the toner on the image carrier.

Yoshikawa discloses an image forming device with an image carrier 1 and a cleaning device 2 equipped with the cleaning blade 3, a piezoelectric element that is a vibration imparting device 15 for imparting the vibration on a cleaning blade 3 so that the blade 3 is prevented from turning up. This reads on the instant invention's "blade member does not curl". Note abstract of Japan, 11-174922. The US Patent No. 6,128,461 discloses that the vibration imparting device 15 is provided on an attachment metal plate of cleaning blade 3. This attachment metal plate reads on the instant invention's vibratable metal. Note US Patent 6,128,461, column 6, lines 19-24. As shown in Fig. 2 of Japan, 11-174922, the blade 3 is positioned that the length of the blade is parallel to an axis of rotation of the image carrier 1 and makes an acute angle with a tangent to the surface of the image carrier 1 in a direction of rotation A of the image carrier 1. The acute angle is less than 90 degrees as shown in Fig. 2. In the US equivalent reference to US Patent No. 6,128,461, Yoshikawa discloses a pressure adjusting hydraulic pump 18 to adjust the pressure the cleaning blade 3 applies upon the surface of the image carrier 1. Note column 8, line 58-column 9, line 2. This reads on the instant invention's "force imparting unit" since the pump 18 allows the pressing force to be effective to good cleaning action.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Matsuguma with that of Yoshikawa so that toner cannot escape from the cleaning blade of Matsuguma.

Claims 88 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuguma (2003/0063928) in view of Yoshikawa (Japan, 922) – US equivalent, 6,128,461 and Nakamura et al. (Japan, 2002-268490).

Matsuguma discloses a color image forming apparatus with a plurality of process cartridges 7y, 7m, 7c, and 7k. Each process cartridge has a photosensitive drum 1, primary charger 3, developing means 5 and a cleaning means 6. The cleaning means 6 is in the form of a blade (note Fig. 1). Each process cartridge has a corresponding transfer roller 8 for transferring toner images from the surfaces of the photosensitive drums 1 onto a transfer material S. Note column 3, paragraphs [0044], [0045], and [0046].

Matsuguma differs from the instant invention by not disclosing a vibrating member and a vibrating unit that vibrates the vibratable member so that the end of the blade member vibrates to clean the toner on the image carrier; and the toner sphericity is 0.96 to 1.00.

Yoshikawa discloses an image forming device with an image carrier 1 and a cleaning device 2 equipped with the cleaning blade 3, a piezoelectric element that is a vibration imparting device 15 for imparting the vibration on a cleaning blade 3 so that the blade 3 is prevented from turning up. This reads on the instant invention's "blade member does not curl". Note abstract of Japan, 11-174922. The US Patent No.

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6,128,461 discloses that the vibration imparting device 15 is provided on an attachment metal plate of cleaning blade 3. This attachment metal plate reads on the instant invention's vibratable metal. Note US Patent 6,128,461, column 6, lines 19-24. As shown in Fig. 2 of Japan, 11-174922, the blade 3 is positioned that the length of the blade is parallel to an axis of rotation of the image carrier 1 and makes an acute angle with a tangent to the surface of the image carrier 1 in a direction of rotation A of the image carrier 1. The acute angle is less than 90 degrees as shown in Fig. 2. In the US equivalent reference to US Patent No. 6,128,461, Yoshikawa discloses a pressure adjusting hydraulic pump 18 to adjust the pressure the cleaning blade 3 applies upon the surface of the image carrier 1. Note column 8, line 58-column 9, line 2. This reads on the instant invention's "force imparting unit" since the pump 18 allows the pressing force to be effective to good cleaning action.

Nakamura et al. discloses toner of a spherical particles used in an image forming device being made by a polymerizing method and having shape factor of 0.940 to 0.985. Note abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Matsuguma with that of Yoshikawa so that toner cannot escape from the cleaning blade of Matsuguma and with that of Nakamura et al. so that picture of high quality can be obtained because of the use of a toner having small particle size as disclosed by Nakamura et al.

Allowable Subject Matter


Claims 9-11, 13-17, 64-66, 70, 71, 75-77, 79-81, 83-85, and 87 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ichida (Japan, 249) discloses art in using a piezoelectric element on an electrode of a developing device. Ogara et al., Muto et al. (122), Muto et al. (638), Maul et al., Hattori, Meltzer, Nakano, Kunishi et al., Itami et al. (962) and Itami et al. (Japan, 963) disclose art in vibrating cleaning members.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan S. Lee whose telephone number is 571-272-2137. The examiner can normally be reached on Mon. - Fri., 10:30-8:00, Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Art Grimley can be reached on 571-272-2136 or 571-272-2800 (Ext. 52). The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Susan S. Lee
Primary Examiner
Art Unit 2852

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